

AMENDMENTS TO THE SPECIFICATION

Add the following new paragraph [0019.5] after existing paragraph [0019]:

--[0019.5] FIG. 3D is an elevational cross-sectional view of on-chip inductor 10 of FIG. 1 particularly illustrating an arrangement of the various layer of FIGS. 3A-3C;--

Amend existing paragraphs [0030] and [0031] as follows:

[0030] FIGS. 3A-~~3C~~-3D illustrate an alternative embodiment of on-chip inductor 10 of FIG. 1. This embodiment of inductor 10 has a three-layer structure having strips of metal-based magnetic materials. The layers are arranged to develop a particular pattern. Layers 1 and 3 (both designated by element numeral 14 in FIG. 1) each include a first portion 30 (denoted "top layer" in the Brief Description of Drawings section above) having horizontally arranged magnetic strips 32 as illustrated in FIG. 3A and a second portion 34 (denoted "intermediate layer" in the Brief Description of Drawings section above) having vertically arranged magnetic strips 36 as illustrated in FIG. 3B. In one embodiment, the particular pattern developed by magnetic strips 32 and magnetic strips 36 is a perfect orthogonal grid pattern. This alternating strip direction arrangement is clearly illustrated in FIG. 3D. Other transverse patterns are also encompassed by the present invention. ~~Layer As seen in FIGS. 3C and 3D, layer 2 includes~~ inductor metal wire turns 38 surrounded by horizontally arranged strips of magnetic material 39.

[0031] Vapor deposition or sputtering may be used to deposit the metal-based magnetic materials used in the embodiment of inductor 10 shown in FIG. 3A-~~3C~~-3D. Vapor deposition produces a high density of magnetic materials, but undesirably high eddy currents may result when the magnetic materials are deposited with certain configurations. To address this problem, strips 32, 36, and 39 are deposited in a particular pattern in the various layers of inductor 10 described above. This pattern significantly reduces or eliminates the eddy currents thereby keeping the Q value of the inductor high. As one skilled in the art will appreciate, alternative layering patterns may also be used so long as they provide the same advantages as the embodiment illustrated in FIGS. 3A-~~3C~~-3D.